Table 1 Association between screening indicators and season.

Months	Number of newborns	CHT	Prevalence (/10 000)	TSH median (IQR)	False positive rate	AUC	95% CI
January–March	104 461	41	3.92	2.78 (1.68– 4.34)	1.34%	0.9958	0.9936–0.9981
April–June	94 226	37	3.93	2.29 (1.35– 3.59)	0.70%	0.9902	0.9763–0.999
July–September	107 419	46	4.28	2.19 (1.29–3.41)	0.52%	0.9985	0.9977–0.9994
October–December	130 998	69	5.27	2.60 (1.57– 4.03)	0.89%	0.9983	0.9974–0.9993
Total	437 103[a]	193[b]	4.42	2.47 (1.47– 3.86)	0.87%	0.9961	0.9930–0.9992

AUC, area under the curve; CH, congenital hypothyroidism; CI, confidence interval; IQR, interquartile range; TSH, thyroid-stimulating hormone.
[a] The analysis did not include the data of 239 babies who were lost to followup.
[b] Screening failed to detect 1 case of CHT.

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Yanni Zhang[a], Yuqi Yang[b], Hongmei Mu[a], Jun Chen[a], Jiang Jian[b,*]

[a] *Hospital Materno-Infantil de Ankang, Ankang, Shaanxi, China*
[b] *Hospital Materno-Infantil de Changzhou, Universidad Médica de Nanjing, Changzhou, Jiangsu, China*

* Corresponding author.
E-mail address: ybcz0519@163.com (J. Jian).

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Adhesive sutures using cyanoacrylate in pleural drains of premature infants☆

Suturas adhesivas mediante cianoacrilato en drenajes pleurales de prematuros

Dear Editor:

Cyanoacrylates are tissue adhesives used to join tissues. From a chemical perspective, they belong to the alkyl cyanoacrylate family and are differentiated by their side chain composition.[1,2] Specifically, Histoacryl® consists of *n*-butyl-2-cyanoacrylate and is indicated for wound closure, sclerotherapy and mesh fixation. In its liquid state, it is a monomeric compound that polymerises on application to tissue, forming a three-dimensional network that keeps tissue edges together. The advantages of using cyanoacrylates as opposed to conventional suturing include their easy application, minimal scar formation and that they form a bacteriostatic, haemostatic, waterproof, and biodegradable barrier.[1–3]

Cyanoacrylates have been widely used as an alternative option for wound closure in adult and paediatric patients, especially in emergency settings or in delicate areas such as the face, as they do not require the use of local anaesthesia required for suturing, are quicker to use, are less painful, cause less redness, are associated with a lower rate of infection and achieve better cosmetic outcomes. All of the above make their use cost-effective.[4]

There are few studies in the literature concerning the use of these adhesives in newborn infants. Tissue adhesive has been used for creating stomas in very low birth weight preterm infants with good results,[5] and was used to close a bronchopleural fistula in a full-term newborn.[6]

In the field of neonatology, the traditional approach to closure after removal of a chest drains was the purse string suture, which had poor cosmetic outcomes. Later on, a new approach was used to close the wound caused by placement of the chest drain with one or two silk suture stitches to prevent recurrence of the pneumothorax or persistence of the fistula. This is a painful and stressful procedure that requires sedation and analgesia, which have side effects in newborns that cannot be overlooked. Furthermore, its cosmetic effects are also not ideal.[4,5]

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Figure 1 A-E) Caso 2-B: A) Right-sided chest drain. B) Removal of drain and closure with liquid tissue adhesive. C) 24 h after closure. D) 48 h after closure. E and F) Case 1: E) 1 week after closure. F) 30 days after closure.

Table 1 Patient characteristics.

	Case 1	Case 2-A	Case 2-B	Case 3
GA (weeks)	30^{+1}	30^{+1}	30^{+1}	36^{+4}
Birth weight (g)	1330 g	1650 g	1650 g	3080 g
Type of ventilation	CMV/NIV	HFV/CMV	HFV/CMV	NIV/Spo
[0,1–5]*Drainage*				
Reason for drainage	Congenital chylothorax	Hydrops fetalis	Hydrops fetalis	Pneumothorax
Location	5th ICS-Left	5th ICS-Left	5th ICS-Right	6th ICS-Right
Days post birth	1	3	3	1
Duration in days	5	12	4	5
Pig-tail catheter calibre	10 Fr	10 Fr	10 Fr	10 Fr
Suction	No	No	No	Yes (-20 cmH_2O)
Complications	No	No	No	No
Type of suture	Histoacryl®	Histoacryl®	Histoacryl®	Histoacryl®
Complications of tissue adhesive suture	None	None	None	None

GA, gestational age; ICS, intercostal space.
Type of ventilation: CMV, conventional mechanical ventilation; HFV, high-frequency ventilation; NIV, non-invasive ventilation; Spo, spontaneous.
Drainage complications: accidental removal, infection, displacement, obstruction.
Closure complications: irritation, wound dehiscence, adhesions, delayed healing, pigmentation, hypertrophic scars and keloids.

The use of cyanoacrylates allows an easier and less invasive closure of wound edges. Thus, it reduces the pain of closure and therefore the amount of sedation and analgesia needed for the procedure. Another advantage is the improved cosmetic outcomes compared to traditional sutures. Following the report of positive outcomes in paediatric studies,[4–6] the use of these adhesives was proposed for closure of insertion sites after removal of chest drains in newborn infants (Fig. 1).

We present a series of cases of wound closure with a cyanoacrylate adhesive following removal of 4 chest drains in 3 preterm infants. Table 1 summarises the demographic and clinical characteristics of the patients and the characteristics of the chest drainage procedure. The patients had been born at a gestational age of 30–36 weeks with birth weights ranging from 1330 to 3080 g. The indications for pigtail catheter placement for chest drainage were pneumothorax and chylothorax, and the duration of drainage

ranged from 4 to 12 days. We observed no complications related to the chest drain or wound closure.

At the time of this writing, the follow-up has continued through discharge (2 months), and we plan to complete the follow-up at age 1 year. To date, we have not observed any complications of this sutureless closure, acute (such as erythema, wound dehiscence, adhesions, delayed wound healing) or chronic (hyperpigmentation, hypertrophic scars or keloids).

In this series of 4 cases, the outcomes of this innovative closure technique were good, with good cosmetic results and no complications in the short and medium term, so we believe that cyanoacrylates can be considered a good alternative to traditional silk sutures for closure of chest drain incisions in newborns. Since the sample was small and there was no control group, additional studies with long-term patient follow-up are required to corroborate our findings.

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Inmaculada Lara-Cantón[a], Pilar Sáenz-González[b], Ana García-Robles[c], Maria Dolores Lorena Mocholí-Tomás[d], Álvaro Solaz-García[a,*]

[a] *Grupo Investigación Perinatología, Instituto de Investigación Sanitaria La Fe, Hospital Universitario y Politécnico La Fe, Valencia, Spain*
[b] *Servicio de Neonatología, Hospital Universitario y Politécnico La Fe, Valencia, Spain*
[c] *PharmD, Grupo de Investigación Perinatología, Instituto de Investigación Sanitaria La Fe, Hospital Universitario y Politécnico La Fe, Valencia, Spain*
[d] *Unidad de Cuidados Intensivos Neonatales, Servicio deNeonatología, Hospital Universitario y Politécnico La Fe, Valencia, Spain*

* Corresponding author.
E-mail address: alvarosogar@gmail.com (Á. Solaz-García).

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Cerebral air embolism in neonates☆

Embolismo aéreo cerebral en neonatos

Dear Editor:

We present 3 cases of cerebral air embolism in newborn infants.

Case 1

Girl born preterm (PT) at 24 weeks' gestation with a birth weight of 764 g. After birth, the patient required level IV advanced neonatal resuscitation with endotracheal intubation, invasive mechanical ventilation and umbilical vein catheterization. At 5 days post birth, she exhibited sudden deterioration with desaturation, bradycardia, marked irritability and uncoordinated movements requiring high-frequency ventilation and sedation with morphine. The amplitude-integrated electroencephalogram (aEEG) evinced convulsive seizures that coincided with sucking movements, which resolved after administration of 2 boluses of phenobarbital. A transfontanellar ultrasound examination revealed several hyperechoic birefringent features in the periventricular region compatible with air embolism (Fig. 1). The follow-up scan at 24 h revealed a decrease in the number of hyperechoic features, with full resolution of these sonographic abnormalities in subsequent days. The patient died at 40 weeks of postmenstrual age of necrotising enterocolitis and persistent sepsis.

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